Precalculus – Lesson 4.2 C Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Convert to radians **without a calculator**:

a. 125° b. 210° c. 60° d. 330° e. 225° f. 270°

\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_

1. Convert to degrees **without a calculator**:

a. b. c. d. e. f.

\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_

1. Convert to radians, round to the nearest thousandth:

a. -23°\_\_\_\_\_\_\_\_ b. 50°15’20” \_\_\_\_\_\_\_\_ c. 200°10’5” \_\_\_\_\_\_\_\_

4. Convert to degrees, round to the nearest thousandth:

a. -2.3\_\_\_\_\_\_\_\_ b. \_\_\_\_\_\_\_\_ c. 5.24 \_\_\_\_\_\_\_\_

5. Find the length of an arc of a 125° central angle in a circle of radius 10cm. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. Find the length of an arc of a circle of radius 5 yards if the central angle of the sector is . \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. The arc of a central angle of radians has a length of 10cm. Find the radius of the circle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. Sketch the following angle and state the quadrant in which it lies.

A) B) 190°

9. Find 2 coterminal angles(one positive and one negative). 10. Find the complement and supplement

Leave your answers in exact form, no rounded decimals. (if possible) for the following angles.

A) B) -325° A) 47° B)

11. Albert Juarez’s truck has wheels 36 inches in diameter. If the wheels are rotating at 630 rpm, find the truck’s speed in miles per hour.

12. The running lanes at the Emery Sears track at Bluffton College are 1 meter wide. The inside radius of lane 1 is 33 meters, and the inside radius of lane 2 is 34 meters. How much longer is lane 2 than lane 1 around the turn?

33m

34m

13. Evaluate without a calculator.

a) sin 150° b) c) d) cos

14. Approximate to the nearest thousandth: (make sure your calculator is in the correct mode)

a. csc10°15’= \_\_\_\_\_\_\_ b. sin = \_\_\_\_\_\_\_ c. cot123° = \_\_\_\_\_\_\_ d. cos( = \_\_\_\_\_\_\_

Use the value of the trigonometric function to evaluate the indicated functions.

15)  16)  17) 

a) cos(-t) a) sin(t) a) cos(π-t)

b) sec(-t) b) csc(t) b) cos(t +π)